ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 965/III

ISO GENERAL PURPOSE METRIC SCREW THREADS

TOLERANCES

DEVIATIONS FOR CONSTRUCTIONAL THREADS

1st EDITION

February 1969

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BRIEF HISTORY

The ISO Recommendation R 965/III, *ISO general purpose metric screw threads — Tolerances — Deviations for constructional threads*, was drawn up by Technical Committee ISO/TC 1, *Screw threads*, the Secretariat of which is held by the Sveriges Standardiseringskommission (SIS).

Work on this question by the Technical Committee led, in 1964, to the adoption of the proposed tolerance system for ISO metric screw threads.

In September 1966, a Draft ISO Recommendation (No. 981) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Argentina	Germany	South Africa, Rep. of
Australia	Greece	Spain
Austria	India	Sweden
Belgium	Israel	Switzerland
Brazil	Italy	Turkey
Canada	Japan	U.A.R.
Chile	Korea, Rep. of	United Kingdom
Czechoslovakia	Netherlands	U.S.A.
Denmark	New Zealand	Yugoslavia
Finland	Norway	
France	Romania	

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in February 1969, to accept it as an ISO RECOMMENDATION.

FOREWORD

This document is one of a number of ISO Recommendations determining tolerances for ISO metric screw threads.

The complete set of these ISO Recommendations is made up as follows :

ISO/R 965/I,   *ISO general purpose metric screw threads – Tolerances –*
                 Principles and basic data;

ISO/R 965/II,   *ISO general purpose metric screw threads – Tolerances*
                 Limits of sizes for commerical bolt and nut threads -- Medium quality;

ISO/R 965/III (this document), *ISO general purpose metric screw threads – Tolerances --*
                 Deviations for constructional threads;

ISO/R . . . *,   *ISO miniature screw threads.*

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* At present Draft ISO Recommendation No. 1501.

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ISO GENERAL PURPOSE METRIC SCREW THREADS

TOLERANCES

DEVIATIONS FOR CONSTRUCTIONAL THREADS

1. SCOPE

This ISO Recommendation tabulates deviations for pitch and crest diameters for ISO general purpose metric screw threads according to ISO Recommendation R 261*.

2. DESIGNATIONS

Tolerances according to this ISO Recommendation are designated by the relevant tolerance class as found under the heading "Tolerance class" in the tables.

Examples :

M6–6H

M6–5g6g

A fit between threaded parts is indicated by the nut thread tolerance designation followed by the bolt thread tolerance designation separated by a stroke.

Example :

M6–6H/5g6g

3. APPLICATION

3.1 Deviations

The deviations specified in this document are derived from the fundamental deviations and tolerances specified in ISO Recommendation R 965/I, *ISO general purpose metric screw threads Tolerances – Principles and basic data.*

3.2 Root contours

For nut threads as well as bolt threads the actual root contour should not in any point transgress the basic profile.

The tabulated values for the minor diameter of the bolt thread are calculated on the basis of an $H/6$ truncation and are to be used for stress calculations, etc.

For coated threads the tolerances apply to the parts *before* coating unless otherwise stated. After coating, the actual thread profile should not in any point transgress the maximum material limits for position H or h respectively.

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* At present under revision, under the new title, *ISO general purpose metric screw threads – General plan* (Draft ISO Recommendation No. 1499).

4. DEVIATIONS

ES, es = upper deviation
EI, ei = lower deviation

Basic major diameter over	up to and incl.	Pitch	Nut thread Tolerance class	Pitch diameter ES	EI	Minor diameter ES	EI	Bolt thread Tolerance class	Major diameter es	ei	Pitch diameter es	ei	Minor diameter (for stress calculations, etc.)
mm	mm	mm		μm	μm	μm	μm		μm	μm	μm	μm	μm
0.99	1.4	0.2	–	–	–	–	–	3h4h	0	–36	0	–24	–29
			4H	+40	0	+38	0	4h	0	–36	0	–30	–29
			5G	–	–	–	–	5g6g	–17	–73	–17	–55	–46
			5H	–	–	–	–	5h4h	0	–36	0	–38	–29
			–	–	–	–	–	5h6h	0	–56	0	–38	–29
			–	–	–	–	–	6e	–	–	–	–	–
			6G	–	–	–	–	6g	–17	–73	–17	–65	–46
			6H	–	–	–	–	6h	0	–56	0	–48	–29
			–	–	–	–	–	7e6e	–	–	–	–	–
			7G	–	–	–	–	7g6g	–	–	–	–	–
			7H	–	–	–	–	7h6h	–	–	–	–	–
			8G	–	–	–	–	8g	–	–	–	–	–
			8H	–	–	–	–	9g8g	–	–	–	–	–
		0.25	–	–	–	–	–	3h4h	0	–42	0	–26	–36
			4H	+45	0	+45	0	4h	0	–42	0	–34	–36
			5G	+74	+18	+74	+18	5g6g	–18	–85	–18	–60	–54
			5H	+56	0	+56	0	5h4h	0	–42	0	–42	–36
			–	–	–	–	–	5h6h	0	–67	0	–42	–36
			–	–	–	–	–	6e	–	–	–	–	–
			6G	–	–	–	–	6g	–18	–85	–18	–71	–54
			6H	–	–	–	–	6h	0	–67	0	–53	–36
			–	–	–	–	–	7e6e	–	–	–	–	–
			7G	–	–	–	–	7g6g	–	–	–	–	–
			7H	–	–	–	–	7h6h	–	–	–	–	–
			8G	–	–	–	–	8g	–	–	–	–	–
			8H	–	–	–	–	9g8g	–	–	–	–	–
		0.3	–	–	–	–	–	3h4h	0	–48	0	–28	–43
			4H	+48	0	+53	0	4h	0	–48	0	–36	–43
			5G	+78	+18	+85	+18	5g6g	–18	–93	–18	–63	–61
			5H	+60	0	+67	0	5h4h	0	–48	0	–45	–43
			–	–	–	–	–	5h6h	0	–75	0	–45	–43
			–	–	–	–	–	6e	–	–	–	–	–
			6G	+93	+18	+103	+18	6g	–18	–93	–18	–74	–61
			6H	+75	0	+85	0	6h	0	–75	0	–56	–43
			–	–	–	–	–	7e6e	–	–	–	–	–
			7G	–	–	–	–	7g6g	–	–	–	–	–
			7H	–	–	–	–	7h6h	–	–	–	–	–
			8G	–	–	–	–	8g	–	–	–	–	–
			8H	–	–	–	–	9g8g	–	–	–	–	–

ES, es = upper deviation
EI, ei = lower deviation

Basic major diameter over	up to and incl.	Pitch	Nut thread Tolerance class	Pitch diameter ES	EI	Minor diameter ES	EI	Bolt thread Tolerance class	Major diameter es	ei	Pitch diameter es	ei	Minor diameter (for stress calculations, etc.)
mm	mm	mm		μm	μm	μm	μm		μm	μm	μm	μm	μm
1.4	2.8	0.2	—	—	—	—	—	3h4h	0	− 35	0	− 25	− 29
			4H	+ 42	0	+ 38	0	4h	0	− 33	0	− 32	− 29
			5G	—	—	—	—	5g6g	−17	− 73	− 17	− 57	− 46
			5H	−	—	—	—	5h4h	0	− 36	0	− 40	− 29
			—	—	—	—	—	5h6h	0	− 56	0	− 40	− 29
			—	—	—	—	—	6e	—	—	—	—	—
			6G	—	—	—	—	6g	−17	− 73	− 17	− 67	− 45
			6H	—	—	—	—	6h	0	− 56	0	− 50	− 29
			—	—	—	—	—	7e6e	—	—	—	—	—
			7G	—	—	—	—	7g6g	—	—	—	—	—
			7H	—	—	—	—	7h6h	—	—	—	—	—
			8G	—	—	—	—	8g	—	—	—	—	—
			8H	—	—	—	—	9g8g	—	—	—	—	—
		0.25	—	—	—	—	—	3h4h	0	− 42	0	− 28	− 33
			4H	+ 48	0	+ 45	0	4h	0	− 42	0	− 35	− 33
			5G	+ 78	+18	+ 74	+18	5g6g	−18	− 85	−18	− 63	− 54
			5H	+ 60	0	+ 56	0	5h4h	0	− 42	0	− 45	− 33
			—	—	—	—	—	5h6h	0	− 67	0	− 45	− 33
			—	—	—	—	—	6e	—	—	—	—	—
			6G	—	—	—	—	6g	−18	− 63	−18	− 74	− 54
			6H	—	—	—	—	6h	0	− 67	0	− 56	− 33
			—	—	—	—	—	7e6e	—	—	—	—	—
			7G	—	—	—	—	7g6g	—	—	—	—	—
			7H	—	—	—	—	7h6h	—	—	—	—	—
			8G	—	—	—	—	8g	—	—	—	—	—
			8H	—	—	—	—	9g8g	—	—	—	—	—
		0.35	—	—	—	—	—	3h4h	0	− 53	0	− 32	− 51
			4H	+ 53	0	+ 63	0	4h	0	− 53	0	− 40	− 51
			5G	+ 86	+19	+ 99	+19	5g6g	−19	−104	−19	− 69	− 70
			5H	+ 67	0	+ 80	0	5h4h	0	− 53	0	− 50	− 51
			—	—	—	—	—	5h6h	0	− 85	0	− 50	− 51
			—	—	—	—	—	6e	—	—	—	—	—
			6G	+104	+19	+119	+19	6g	−19	−104	−19	− 62	− 70
			6H	+ 85	0	+100	0	6h	0	− 85	0	− 63	− 51
			—	—	—	—	—	7e6e	—	—	—	—	—
			7G	—	—	—	—	7g6g	−19	−104	−19	− 99	− 70
			7H	—	—	—	—	7h6h	0	− 85	0	− 80	− 51
			8G	—	—	—	—	8g	—	—	—	—	—
			8H	—	—	—	—	9g8g	—	—	—	—	—
		0.4	—	—	—	—	—	3h4h	0	− 60	0	− 34	− 58
			4H	+ 56	0	+ 71	0	4h	0	− 60	0	− 42	− 58
			5G	+ 90	+19	+109	+19	5g6g	−19	−114	−19	− 72	− 77
			5H	+ 71	0	+ 90	0	5h4h	0	− 60	0	− 53	− 58
			—	—	—	—	—	5h6h	0	− 95	0	− 53	− 58
			—	—	—	—	—	6e	—	—	—	—	—
			6G	+109	+19	+131	+19	6g	−19	−114	−19	− 86	− 77
			6H	+ 90	0	+112	0	6h	0	− 95	0	− 67	− 58
			—	—	—	—	—	7e6e	—	—	—	—	—

ES, es = upper deviation
EI, ei = lower deviation

Basic major diameter		Pitch	Nut thread					Bolt thread					
over	up to and incl.		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.)
				ES	EI	ES	EI		es	ei	es	ei	
mm	mm	mm		μm	μm	μm	μm		μm	μm	μm	μm	μm
1.4	2.8	0.4	7G	–	–	–	–	7g6g	–19	–114	–19	–104	– 77
			7H	–	–	–	–	7h6h	0	– 95	0	– 85	– 58
			8G	–	–	–	–	8g	–	–	–	–	–
			8H	–	–	–	–	9g8g	–	–	–	–	–
		0.45	–	–	–	–	–	3h4h	0	– 63	0	– 35	– 65
			4H	+ 60	0	+ 80	0	4h	0	– 63	0	– 45	– 65
			5G	+ 95	+20	+120	+20	5g6g	–20	–120	–20	– 75	– 85
			5H	+ 75	0	+100	0	5h4h	0	– 63	0	– 56	– 65
			–	–	–	–	–	5h6h	0	–100	0	– 56	– 65
			–	–	–	–	–	6e	–	–	–	–	–
			6G	+115	+20	+145	+20	6g	–20	–120	–20	– 91	– 85
			6H	+ 95	0	+125	0	6h	0	–100	0	– 71	– 65
			–	–	–	–	–	7e6e	–	–	–	–	–
			7G	–	–	–	–	7g6g	–20	–120	–20	–110	– 85
			7H	–	–	–	–	7h6h	0	–100	0	– 90	– 85
			8G	–	–	–	–	8g	–	–	–	–	–
			8H	–	–	–	–	9g8g	–	–	–	–	–
2.8	5.6	0.35	–	–	–	–	–	3h4h	0	– 53	0	– 34	– 51
			4H	+ 56	0	+ 63	0	4h	0	– 53	0	– 42	– 51
			5G	+ 90	+19	+ 99	+19	5g6g	–19	–104	–19	– 72	– 70
			5H	+ 71	0	+ 80	0	5h4h	0	– 53	0	– 53	– 51
			–	–	–	–	–	5h6h	0	– 85	0	– 53	– 51
			–	–	–	–	–	6e	–	–	–	–	–
			6G	+109	+19	+119	+19	6g	–19	–104	–19	– 86	– 70
			6H	+ 90	0	+100	0	6h	0	– 85	0	– 67	– 51
			–	–	–	–	–	7e6e	–	–	–	–	–
			7G	–	–	–	–	7g6g	–19	–104	–19	–104	– 70
			7H	–	–	–	–	7h6h	0	– 85	0	– 85	– 51
			8G	–	–	–	–	8g	–	–	–	–	–
			8H	–	–	–	–	9g8g	–	–	–	–	–
		0.5	–	–	–	–	–	3h4h	0	– 67	0	– 38	– 72
			4H	+ 63	0	+ 90	0	4h	0	– 67	0	– 48	– 72
			5G	+100	+20	+132	+20	5g6g	–20	–126	–20	– 80	– 92
			5H	+ 80	0	+112	0	5h4h	0	– 67	0	– 60	– 72
			–	–	–	–	–	5h6h	0	–105	0	– 60	– 72
			–	–	–	–	–	6e	–50	–156	–50	–125	–122
			6G	+120	+20	+160	+20	6g	–20	–126	–20	– 95	– 92
			6H	+100	0	+140	0	6h	0	–105	0	– 75	– 72
			–	–	–	–	–	7e6e	–50	–156	–50	–145	–122
			7G	+145	+20	+200	+20	7g6g	–20	–126	–20	–115	– 92
			7H	+125	0	+180	0	7h6h	0	–106	0	– 95	– 72
			8G	–	–	–	–	8g	–	–	–	–	–
			8H	–	–	–	–	9g8g	–	–	–	–	–

ES, es = upper deviation
EI, ei = lower deviation

Basic major diameter		Pitch	Nut thread					Bolt thread					
over	up to and incl.		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.)
				ES	EI	ES	EI		es	ei	es	ei	
mm	mm	mm		µm	µm	µm	µm		µm	µm	µm	µm	µm
2.8	5.6	0.6	–	–	–	–	–	3h4h	0	– 80	0	– 42	– 87
			4H	+ 71	0	+100	0	4h	0	– 80	0	– 53	– 87
			5G	+111	+21	+146	+21	5g6g	–21	–146	–21	– 86	–108
			5H	+ 90	0	+125	0	5h4h	0	– 80	0	– 67	– 87
			–	–	–	–	–	5h6h	0	–125	0	– 67	– 87
			–	–	–	–	–	6e	–53	–178	–53	–138	–140
			6G	+133	+21	+181	+21	6g	–21	–146	–21	–106	–108
			6H	+112	0	+160	0	6h	0	–125	0	– 85	– 87
			–					7e6e	–53	–178	–53	–159	–140
			7G	+161	+21	+221	+21	7g6g	–21	–146	–21	–127	–108
			7H	+140	0	+200	0	7h6h	0	–125	0	–103	– 87
			8G					8g					
			8H					9g8g					
		0.7	–	–	–	–	–	3h4h	0	– 90	0	– 45	–101
			4H	+ 75	0	+112	0	4h	0	– 90	0	– 56	–101
			5G	+117	+22	+162	+22	5g6g	–22	–162	–22	– 93	–123
			5H	+ 95	0	+140	0	5h4h	0	– 90	0	– 71	–101
			–					5h6h	0	–140	0	– 71	–101
			–					6e	–56	–196	–56	–145	–157
			6G	+140	+22	+202	+22	6g	–22	–162	–22	–112	–123
			6H	+118	0	+180	0	6h	0	–140	0	– 90	–101
			–					7e6e	–55	–193	–56	–188	–157
			7G	+172	+22	+246	+22	7g6g	–22	–162	–22	–134	–123
			7H	+150	0	+224	0	7h6h	0	–140	0	–112	–101
			8G					8g					
			8H					9g8g					
		0.75	–					3h4h	0	– 90	0	– 45	–108
			4H	+ 75	0	+118		4h	0	– 90	0	– 56	–108
			5G	+117	+22	+172	+22	5g6g	–22	–162	–22	– 93	–130
			5H	+ 95	0	+150	0	5h4h	0	– 90	0	– 71	–108
			–					5h6h	0	–140	0	– 71	–108
			–					6e	–56	–196	–56	–143	–164
			6G	+140	+22	+212	+22	6g	–22	–162	–22	–112	–130
			6H	+118	0	+190	0	6h	0	–140	0	– 90	–108
			–					7e6e	–56	–196	–56	–168	–164
			7G	+172	+22	+258	+22	7g6g	–22	–162	–22	–134	–130
			7H	+150	0	+235	0	7h6h	0	–140	0	–112	–108
			8G					8g					
			8H					9g8g					
		0.8	–	–	–	–	–	3h4h	0	– 95	0	– 48	–116
			4H	+ 80	0	+125	0	4h	0	– 95	0	– 60	–116
			5G	+124	+24	+184	+24	5g6g	–24	–174	–24	– 99	–140
			5H	+100	0	+160	0	5h4h	0	– 95	0	– 75	–116
			–	–	–	–	–	5h6h	0	–150	0	– 75	–116
			–	–	–	–	–	6e	–60	–210	–60	–155	–176
			6G	+149	+24	+224	+24	6g	–24	–174	–24	–119	–140
			6H	+125	0	+200	0	6h	0	–150	0	– 95	–116

ES, es = upper deviation
EI, ei = lower deviation

Basic major diameter		Pitch	Nut thread					Bolt thread					
over	up to and incl.		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.)
				ES	EI	ES	EI		es	ei	es	ei	
mm	mm	mm		μm	μm	μm	μm		μm	μm	μm	μm	μm
2.8	5.6	0.8	–	–	–	–	–	7e8e	-60	-210	-60	-178	-176
			7G	+184	+24	+274	+24	7g6g	-24	-174	-24	-142	-140
			7H	+160	0	+250	0	7h6h	0	-150	0	-118	-116
			8G	+224	+24	+339	+24	8g	-24	-260	-24	-174	-140
			8H	+200	0	+315	0	9g8g	-24	-260	-24	-214	-140
5.6	11.2	0.75	–	–	–	–	–	3h4h	0	-90	0	-50	-103
			4H	+85	0	+118	0	4h	0	-90	0	-63	-103
			5G	+128	+22	+172	+22	5g6g	-22	-162	-22	-102	-130
			5H	+106	0	+150	0	5h4h	0	-90	0	-80	-103
			–	–	–	–	–	5h6h	0	-140	0	-80	-103
			–	–	–	–	–	6e	-56	-196	-56	-156	-164
			6G	+154	+22	+212	+22	6g	-22	-162	-22	-122	-130
			6H	+132	0	+190	0	6h	0	-140	0	-100	-108
			–	–	–	–	–	7e6e	-56	-193	-56	-181	-164
			7G	+192	+22	+258	+22	7g6g	-22	-162	-22	-147	-130
			7H	+170	0	+236	0	7h6h	0	-140	0	-125	-108
			8G	–	–	–	–	8g	–	–	–	–	–
			8H	–	–	–	–	9g8g	–	–	–	–	–
		1	–	–	–	–	–	3h4h	0	-112	0	-56	-144
			4H	+95	0	+150	0	4h	0	-112	0	-71	-144
			5G	+144	+26	+216	+26	5g6g	-26	-206	-26	-116	-170
			5H	+118	0	+190	0	5h4h	0	-112	0	-90	-144
			–	–	–	–	–	5h6h	0	-180	0	-90	-144
			–	–	–	–	–	6e	-60	-240	-60	-172	-204
			6G	+176	+26	+262	+26	6g	-26	-206	-26	-138	-170
			6H	+150	0	+236	0	6h	0	-180	0	-112	-144
			–	–	–	–	–	7e6e	-60	-240	-60	-200	-204
			7G	+216	+26	+326	+26	7g6g	-26	-206	-26	-166	-170
			7H	+190	0	+300	0	7h6h	0	-180	0	-140	-144
			8G	+262	+26	+401	+26	8g	-26	-306	-26	-206	-170
			8H	+236	0	+375	0	9g8g	-26	-306	-26	-250	-170
		1.25	–	–	–	–	–	3h4h	0	-132	0	-60	-180
			4H	+100	0	+170	0	4h	0	-132	0	-75	-180
			5G	+153	+28	+240	+28	5g6g	-28	-240	-28	-123	-208
			5H	+125	0	+212	0	5h4h	0	-132	0	-95	-180
			–	–	–	–	–	5h6h	0	-212	0	-95	-180
			–	–	–	–	–	6e	-63	-275	-63	-181	-243
			6G	+188	+28	+293	+28	6g	-28	-240	-28	-146	-208
			6H	+160	0	+265	0	6h	0	-212	0	-118	-180
			–	–	–	–	–	7e6e	-63	-275	-63	-213	-243
			7G	+228	+28	+363	+28	7g6g	-28	-240	-28	-178	-208
			7H	+200	0	+335	0	7h6h	0	-212	0	-150	-180
			8G	+278	+28	+453	+28	8g	-28	-363	-28	-218	-208
			8H	+250	0	+425	0	9g8g	-28	-363	-28	-264	-208

ES, es = upper deviation
EI, ei = lower deviation

Basic major diameter		Pitch	Nut thread					Bolt thread					
over	up to and incl.		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.)
				ES	EI	ES	EI		es	ei	es	ei	
mm	mm	mm		μm	μm	μm	μm		μm	μm	μm	μm	μm
5.6	11.2	1.5	–	–	–	–	–	3h4h	0	-150	0	-67	-217
			4H	+112	0	+190	0	4h	0	-150	0	-85	-217
			5G	+172	+32	+268	+32	5g6g	-32	-268	-32	-138	-249
			5H	+140	0	+236	0	5h4h	0	-150	0	-106	-217
			–	–	–	–	–	5h6h	0	-236	0	-106	-217
			–	–	–	–	–	6e	-67	-303	-67	-199	-284
			6G	+212	+32	+332	+32	6g	-32	-268	-32	-164	-249
			6H	+180	0	+300	0	6h	0	-236	0	-132	-217
			–	–	–	–	–	7e6e	-67	-303	-67	-237	-284
			7G	+256	+32	+407	+32	7g6g	-32	-268	-32	-202	-249
			7H	+224	0	+375	0	7h6h	0	-236	0	-170	-217
			8G	+312	+32	+507	+32	8g	-32	-407	-32	-244	-249
			8H	+280	0	+475	0	9g8g	-32	-407	-32	-297	-249
11.2	22.4	1	–	–	–	–	–	3h4h	0	-112	0	-60	-144
			4H	+100	0	+150	0	4h	0	-112	0	-75	-144
			5G	+151	+26	+216	+26	5g6g	-26	-206	-26	-121	-170
			5H	+125	0	+190	0	5h4h	0	-112	0	-95	-144
			–	–	–	–	–	5h6h	0	-180	0	-95	-144
			–	–	–	–	–	6e	-60	-240	-60	-178	-204
			6G	+186	+26	+262	+26	6g	-26	-206	-26	-144	-170
			6H	+160	0	+236	0	6h	0	-180	0	-118	-144
			–	–	–	–	–	7e6e	-60	-240	-60	-210	-204
			7G	+226	+26	+326	+26	7g6g	-26	-206	-26	-176	-170
			7H	+200	0	+300	0	7h6h	0	-180	0	-150	-144
			8G	+276	+26	+401	+26	8g	-26	-306	-26	-216	-170
			8H	+250	0	+375	0	9g8g	-26	-306	-26	-262	-170
		1.25	–	–	–	–	–	3h4h	0	-132	0	-67	-180
			4H	+112	0	+170	0	4h	0	-132	0	-85	-180
			5G	+168	+28	+240	+28	5g6g	-28	-240	-28	-131	-208
			5H	+140	0	+212	0	5h4h	0	-132	0	-106	-180
			–	–	–	–	–	5h6h	0	-212	0	-106	-180
			–	–	–	–	–	6e	-63	-275	-63	-195	-243
			6G	+208	+28	+293	+28	6g	-28	-240	-28	-160	-208
			6H	+180	0	+265	0	6h	0	-212	0	-132	-180
			–	–	–	–	–	7e6e	-63	-275	-63	-233	-243
			7G	+252	+28	+363	+28	7g6g	-28	-240	-28	-198	-208
			7H	+224	0	+335	0	7h6h	0	-212	0	-170	-180
			8G	+308	+28	+453	+28	8g	-28	-363	-28	-240	-208
			8H	+280	0	+425	0	9g8g	-28	-363	-28	-293	-208
		1.5	–	–	–	–	–	3h4h	0	-150	0	-71	-217
			4H	+118	0	+190	0	4h	0	-150	0	-90	-217
			5G	+182	+32	+268	+32	5g6g	-32	-268	-32	-144	-249
			5H	+150	0	+236	0	5h4h	0	-150	0	-112	-217
			–	–	–	–	–	5h6h	0	-236	0	-112	-217
			–	–	–	–	–	6e	-67	-303	-67	-207	-284
			6G	+222	+32	+332	+32	6g	-32	-268	-32	-172	-249
			6H	+190	0	+300	0	6h	0	-236	0	-140	-217

ES, es = upper deviation
EI, ei = lower deviation

Basic major diameter		Pitch	Nut thread					Bolt thread					
over	up to and incl.		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.)
				ES	EI	ES	EI		es	ei	es	ei	
mm	mm	mm		μm	μm	μm	μm		μm	μm	μm	μm	μm
11.2	22.4	1.5	–	–	–	–	–	7e6e	−67	−303	−67	−247	−284
			7G	+268	+32	+407	+32	7g6g	−32	−268	−32	−212	−249
			7H	+236	0	+375	0	7h6h	0	−236	0	−180	−217
			8G	+332	+32	+507	+32	8g	−32	−407	−32	−256	−249
			8H	+300	0	+475	0	9g8g	−32	−407	−32	−312	−249
		1.75	–	–	–	–	–	3h4h	0	−170	0	−75	−253
			4H	+125	0	+212	0	4h	0	−170	0	−95	−253
			5G	+194	+34	+299	+34	5g6g	−34	−299	−34	−152	−287
			5H	+160	0	+265	0	5h4h	0	−170	0	−118	−253
			–					5h6h	0	−265	0	−118	−253
			–					6e	−71	−336	−71	−221	−324
			6G	+234	+34	+369	+34	6g	−34	−299	−34	−184	−287
			6H	+200	0	+335	0	6h	0	−265	0	−150	−253
			–					7e6e	−71	−336	−71	−261	−324
			7G	+284	+34	+459	+34	7g6g	−34	−299	−34	−224	−287
			7H	+250	0	+425	0	7h6h	0	−265	0	−190	−253
			8G	+349	+34	+564	+34	8g	−34	−459	−34	−270	−287
			8H	+315	0	+530	0	9g8g	−34	−459	−34	−334	−287
		2	–	–	–	–	–	3h4h	0	−180	0	−80	−289
			4H	+132	0	+236	0	4h	0	−180	0	−100	−289
			5G	+208	+38	+338	+38	5g6g	−38	−318	−38	−163	−327
			5H	+170	0	+300	0	5h4h	0	−180	0	−125	−289
			–					5h6h	0	−280	0	−125	−289
			–					6e	−71	−351	−71	−231	−360
			6G	+250	+38	+413	+38	6g	−38	−318	−38	−198	−327
			6H	+212	0	+375	0	6h	0	−280	0	−160	−289
								7e6e	−71	−351	−71	−271	−360
			7G	+303	+38	+513	+38	7g6g	−38	−318	−38	−238	−327
			7H	+265	0	+475	0	7h6h	0	−280	0	−200	−289
			8G	+373	+38	+638	+38	8g	−38	−488	−38	−288	−327
			8H	+335	0	+600	0	9g8g	−38	−488	−38	−353	−327
		2.5	–	–	–	–	–	3h4h	0	−212	0	−85	−361
			4H	+140	0	+280	0	4h	0	−212	0	−106	−361
			5G	+222	+42	+397	+42	5g6g	−42	−377	−42	−174	−403
			5H	+180	0	+355	0	5h4h	0	−212	0	−132	−361
			–					5h6h	0	−335	0	−132	−361
			–					6e	−80	−415	−80	−250	−441
			6G	+266	+42	+492	+42	6g	−42	−377	−42	−212	−403
			6H	+224	0	+450	0	6h	0	−335	0	−170	−361
			–					7e6e	−80	−415	−80	−292	−441
			7G	+322	+42	+602	+42	7g6g	−42	−377	−42	−254	−403
			7H	+280	0	+560	0	7h6h	0	−335	0	−212	−361
			8G	+397	+42	+752	+42	8g	−42	−572	−42	−307	−403
			8H	+355	0	+710	0	9g8g	−42	−572	−42	−377	−403

ES, es = upper deviation
EI, ei = lower deviation

Basic major diameter		Pitch	Nut thread					Bolt thread					
over	up to and incl.		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.)
				ES	EI	ES	EI		es	ei	es	ei	
mm	mm	mm		μm	μm	μm	μm		μm	μm	μm	μm	μm
22.4	45	1	—	—	—	—	—	3h4h	0	-112	0	-63	-144
			4H	+106	0	+150	0	4h	0	-112	0	-80	-144
			5G	+158	+26	+216	+26	5g6g	-26	-206	-26	-126	-170
			5H	+132	0	+190	0	5h4h	0	-112	0	-100	-144
			—	—	—	—	—	5h6h	0	-180	0	-100	-144
			—	—	—	—	—	6e	-60	-240	-60	-185	-204
			6G	+196	+26	+262	+26	6g	-26	-206	-26	-151	-170
			6H	+170	0	+236	0	6h	0	-180	0	-125	-144
			—	—	—	—	—	7e6e	-60	-240	-60	-220	-204
			7G	+238	+26	+326	+26	7g6g	-26	-206	-26	-186	-170
			7H	+212	0	+300	0	7h6h	0	-180	0	-160	-144
			8G	—	—	—	—	8g	-26	-306	-26	-226	-170
			8H	—	—	—	—	9g8g	-26	-306	-26	-276	-170
		1.5	—	—	—	—	—	3h4h	0	-150	0	-75	-217
			4H	+125	0	+190	0	4h	0	-150	0	-95	-217
			5G	+192	+32	+268	+32	5g6g	-32	-268	-32	-150	-249
			5H	+160	0	+236	0	5h4h	0	-150	0	-118	-217
			—	—	—	—	—	5h6h	0	-236	0	-118	-217
			—	—	—	—	—	6e	-67	-303	-67	-217	-284
			6G	+232	+32	+332	+32	6g	-32	-268	-32	-182	-249
			6H	+200	0	+300	0	6h	0	-236	0	-150	-217
			—	—	—	—	—	7e6e	-67	-303	-67	-257	-284
			7G	+282	+32	+407	+32	7g6g	-32	-268	-32	-222	-249
			7H	+250	0	+375	0	7h6h	0	-236	0	-190	-217
			8G	+347	+32	+507	+32	8g	-32	-407	-32	-268	-249
			8H	+315	0	+475	0	9g8g	-32	-407	-32	-332	-249
		2	—	—	—	—	—	3h4h	0	-180	0	-85	-289
			4H	+140	0	+236	0	4h	0	-180	0	-106	-289
			5G	+218	+38	+338	+38	5g6g	-38	-318	-38	-170	-327
			5H	+180	0	+300	0	5h4h	0	-180	0	-132	-289
			—	—	—	—	—	5h6h	0	-280	0	-132	-289
			—	—	—	—	—	6e	-71	-351	-71	-241	-360
			6G	+262	+38	+413	+38	6g	-38	-318	-38	-208	-327
			6H	+224	0	+375	0	6h	0	-280	0	-170	-289
			—	—	—	—	—	7e6e	-71	-351	-71	-283	-360
			7G	+318	+38	+513	+38	7g6g	-38	-318	-38	-250	-327
			7H	+280	0	+475	0	7h6h	0	-280	0	-212	-289
			8G	+393	+38	+638	+38	8g	-38	-488	-38	-303	-327
			8H	+355	0	+600	0	9g8g	-38	-488	-38	-373	-327
		3	—	—	—	—	—	3h4h	0	-236	0	-100	-433
			4H	+170	0	+315	0	4h	0	-236	0	-125	-433
			5G	+260	+48	+448	+48	5g6g	-48	-423	-48	-208	-481
			5H	+212	0	+400	0	5h4h	0	-236	0	-160	-433
			—	—	—	—	—	5h6h	0	-375	0	-160	-433
			—	—	—	—	—	6e	-85	-460	-85	-285	-518
			6G	+313	+48	+548	+48	6g	-48	-423	-48	-248	-481
			6H	+265	0	+500	0	6h	0	-375	0	-200	-433

ES, es = upper deviation
EI, ei = lower deviation

Basic major diameter		Pitch	Nut thread					Bolt thread					
over	up to and incl.		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.)
				ES	EI	ES	EI		es	ei	es	ei	
mm	mm	mm		μm	μm	μm	μm		μm	μm	μm	μm	μm
22.4	45	3	—	—	—	—	—	7e6e	−85	−460	−85	−335	−518
			7G	+383	+48	+678	+48	7g6g	−48	−423	−48	−298	−481
			7H	+335	0	+630	0	7h6h	0	−375	0	−250	−433
			8G	+473	+48	+848	+48	8g	−48	−648	−48	−363	−481
			8H	+425	0	+800	0	9g8g	−48	−648	−48	−448	−481
		3.5	—	—	—	—	—	3h4h	0	−265	0	−106	−505
			4H	+180	0	+355	0	4h	0	−265	0	−132	−505
			5G	+277	+53	+503	+53	5g6g	−53	−478	−53	−223	−558
			5H	+224	0	+450	0	5h4h	0	−265	0	−170	−505
			—	—	—	—	—	5h6h	0	−425	0	−170	−505
			—	—	—	—	—	6e	−90	−515	−90	−302	−595
			6G	+333	+53	+613	+53	6g	−53	−478	−53	−265	−558
			6H	+280	0	+560	0	6h	0	−425	0	−212	−505
			—	—	—	—	—	7e6e	−90	−515	−90	−355	−595
			7G	+408	+53	+763	+53	7g6g	−53	−478	−53	−318	−558
			7H	+355	0	+710	0	7h6h	0	−425	0	−265	−505
			8G	+503	+53	+953	+53	8g	−53	−723	−53	−388	−558
			8H	+450	0	+900	0	9g8g	−53	−723	−53	−478	−558
		4	—	—	—	—	—	3h4h	0	−300	0	−112	−577
			4H	+190	0	+375	0	4h	0	−300	0	−140	−577
			5G	+296	+60	+535	+60	5g6g	−60	−535	−60	−240	−637
			5H	+236	0	+475	0	5h4h	0	−300	0	−180	−577
			—	—	—	—	—	5h6h	0	−475	0	−180	−577
			—	—	—	—	—	6e	−95	−570	−95	−319	−672
			6G	+360	+60	+660	+60	6g	−60	−535	−60	−284	−637
			6H	+300	0	+600	0	6h	0	−475	0	−224	−577
			—	—	—	—	—	7e6e	−95	−570	−95	−375	−672
			7G	+435	+60	+810	+60	7g6g	−60	−535	−60	−340	−637
			7H	+375	0	+750	0	7h6h	0	−475	0	−280	−577
			8G	+535	+60	+1010	+60	8g	−60	−810	−60	−415	−637
			8H	+475	0	+950	0	9g8g	−60	−810	−60	−510	−637
		4.5	—	—	—	—	—	3h4h	0	−315	0	−118	−650
			4H	+200	0	+425	0	4h	0	−315	0	−150	−650
			5G	+313	+63	+593	+63	5g6g	−63	−563	−63	−253	−713
			5H	+250	0	+530	0	5h4h	0	−315	0	−190	−650
			—	—	—	—	—	5h6h	0	−500	0	−190	−650
			—	—	—	—	—	6e	−100	−600	−100	−336	−750
			6G	+378	+63	+733	+63	6g	−63	−563	−63	−299	−713
			6H	+315	0	+670	0	6h	0	−500	0	−236	−650
			—	—	—	—	—	7e6e	−100	−600	−100	−400	−750
			7G	+463	+63	+913	+63	7g6g	−63	−563	−63	−363	−713
			7H	+400	0	+850	0	7h6h	0	−500	0	−300	−650
			8G	+563	+63	+1123	+63	8g	−63	−863	−63	−438	−713
			8H	+500	0	+1060	0	9g8g	−63	−863	−63	−538	−713

ES, es = upper deviation
EI, ei = lower deviation

Basic major diameter		Pitch	Nut thread					Bolt thread					
over	up to and incl.		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.)
				ES	EI	ES	EI		es	ei	es	ei	
mm	mm	mm		μm	μm	μm	μm		μm	μm	μm	μm	μm
45	90	1.5	—	—	—	—	—	3h4h	0	-150	0	-80	-217
			4H	+132	0	+190	0	4h	0	-150	0	-100	-217
			5G	+202	+32	+268	+32	5g6g	-32	-268	-32	-157	-249
			5H	+170	0	+236	0	5h4h	0	-150	0	-125	-217
			—	—	—	—	—	5h6h	0	-236	0	-125	-217
			—	—	—	—	—	6e	-67	-303	-67	-227	-284
			6G	+244	+32	+332	+32	6g	-32	-268	-32	-192	-249
			6H	+212	0	+300	0	6h	0	-236	0	-160	-217
			—	—	—	—	—	7e6e	-67	-303	-67	-267	-284
			7G	+297	+32	+407	+32	7g6g	-32	-268	-32	-232	-249
			7H	+265	0	+375	0	7h6h	0	-236	0	-200	-217
			8G	+367	+32	+507	+32	8g	-32	-407	-32	-282	-249
			8H	+335	0	+475	0	9g8g	-32	-407	-32	-347	-249
		2	—	—	—	—	—	3h4h	0	-180	0	-90	-289
			4H	+150	0	+236	0	4h	0	-180	0	-112	-289
			5G	+228	+38	+338	+38	5g6g	-38	-318	-38	-178	-327
			5H	+190	0	+300	0	5h4h	0	-180	0	-140	-289
			—	—	—	—	—	5h6h	0	-280	0	-140	-289
			—	—	—	—	—	6e	-71	-351	-71	-251	-360
			6G	+274	+38	+413	+38	6g	-38	-318	-38	-218	-327
			6H	+236	0	+375	0	6h	0	-280	0	-180	-289
			—	—	—	—	—	7e6e	-71	-351	-71	-295	-360
			7G	+338	+38	+513	+38	7g6g	-38	-318	-38	-262	-327
			7H	+300	0	+475	0	7h6h	0	-280	0	-224	-289
			8G	+413	+38	+638	+38	8g	-38	-488	-38	-318	-327
			8H	+375	0	+600	0	9g8g	-38	-488	-38	-393	-327
		3	—	—	—	—	—	3h4h	0	-236	0	-106	-433
			4H	+180	0	+315	0	4h	0	-236	0	-132	-433
			5G	+272	+48	+448	+48	5g6g	-48	-423	-48	-218	-481
			5H	+224	0	+400	0	5h4h	0	-236	0	-170	-433
			—	—	—	—	—	5h6h	0	-375	0	-170	-433
			—	—	—	—	—	6e	-85	-460	-85	-297	-518
			6G	+328	+48	+548	+48	6g	-48	-423	-48	-260	-481
			6H	+280	0	+500	0	6h	0	-375	0	-212	-433
			—	—	—	—	—	7e6e	-85	-460	-85	-350	-518
			7G	+403	+48	+678	+48	7g6g	-48	-423	-48	-313	-481
			7H	+355	0	+630	0	7h6h	0	-375	0	-265	-433
			8G	+498	+48	+848	+48	8g	-48	-648	-48	-383	-481
			8H	+450	0	+800	0	9g8g	-48	-648	-48	-473	-481
		4	—	—	—	—	—	3h4h	0	-300	0	-118	-577
			4H	+200	0	+375	0	4h	0	-300	0	-150	-577
			5G	+310	+60	+535	+60	5g6g	-60	-535	-60	-250	-637
			5H	+250	0	+475	0	5h4h	0	-300	0	-190	-577
			—	—	—	—	—	5h6h	0	-475	0	-190	-577
			—	—	—	—	—	6e	-95	-570	-95	-331	-672

ES, es = upper deviation
EI, ei = lower deviation

Basic major diameter		Pitch	Nut thread					Bolt thread					
over	up to and incl.		Tolerance class	Pitch diameter		Minor diameter		Tolerance class	Major diameter		Pitch diameter		Minor diameter (for stress calculations, etc.)
				ES	EI	ES	EI		es	ei	es	ei	
mm	mm	mm		μm	μm	μm	μm		μm	μm	μm	μm	μm
45	90	4	6G	+375	+60	+660	+60	6g	-60	-535	-60	-296	-637
			6H	+315	0	+600	0	6h	0	-475	0	-236	-577
			–	–	–	–	–	7e6e	-95	-570	-95	-395	-672
			7G	+460	+60	+810	+60	7g6g	-60	-535	-60	-360	-637
			7H	+400	0	+750	0	7h6h	0	-475	0	-300	-577
			8G	+560	+60	+1010	+60	8g	-60	-810	-60	-435	-637
			8H	+500	0	+950	0	9g8g	-60	-810	-60	-535	-637
		5	–	–	–	–	–	3h4h	0	-335	0	-125	-722
			4H	+212	0	+450	0	4h	0	-335	0	-160	-722
			5G	+336	+71	+631	+71	5g6g	-71	-601	-71	-271	-793
			5H	+265	0	+560	0	5h4h	0	-335	0	-200	-722
								5h6h	0	-530	0	-200	-722
								6e	-106	-636	-106	-356	-828
			6G	+406	+71	+781	+71	6g	-71	-601	-71	-321	-793
			6H	+335	0	+710	0	6h	0	-530	0	-250	-722
			–	–	–	–	–	7e6e	-106	-636	-106	-421	-828
			7G	+496	+71	+971	+71	7g6g	-71	-601	-71	-386	-793
			7H	+425	0	+900	0	7h6h	0	-530	0	-315	-722
			8G	+601	+71	+1191	+71	8g	-71	-921	-71	-471	-793
			8H	+530	0	+1120	0	9g8g	-71	-921	-71	-571	-793
		5.5	–	–	–	–	–	3h4h	0	-355	0	-132	-794
			4H	+224	0	+475	0	4h	0	-355	0	-170	-794
			5G	+355	+75	+675	+75	5g6g	-75	-635	-75	-287	-869
			5H	+280	0	+600	0	5h4h	0	-355	0	-212	-794
			–					5h6h	0	-560	0	-212	-794
								6e	-112	-672	-112	-377	-906
			6G	+430	+75	+825	+75	6g	-75	-635	-75	-340	-869
			6H	+355	0	+750	0	6h	0	-560	0	-265	-794
								7e6e	-112	-672	-112	-447	-906
			7G	+525	+75	+1025	+75	7g6g	-75	-635	-75	-410	-869
			7H	+450	0	+950	0	7h6h	0	-560	0	-335	-794
			8G	+635	+75	+1255	+75	8g	-75	-975	-75	-500	-869
			8H	+560	0	+1180	0	9g8g	-75	-975	-75	-605	-869
		6	–	–	–	–	–	3h4h	0	-375	0	-140	-866
			4H	+236	0	+500	0	4h	0	-375	0	-180	-866
			5G	+380	+80	+710	+80	5g6g	-80	-680	-80	-304	-946
			5H	+300	0	+630	0	5h4h	0	-375	0	-224	-866
								5h6h	0	-600	0	-224	-866
			–					6e	-118	-718	-118	-398	-984
			6G	+455	+80	+880	+80	6g	-80	-680	-80	-360	-946
			6H	+375	0	+800	0	6h	0	-600	0	-280	-866
								7e6e	-118	-718	-118	-473	-984
			7G	+555	+80	+1080	+80	7g6g	-80	-680	-80	-435	-946
			7H	+475	0	+1000	0	7h6h	0	-600	0	-355	-866
			8G	+680	+80	+1330	+80	8g	-80	-1030	-80	-530	-946
			8H	+600	0	+1250	9	9g8g	-80	-1030	-80	-640	-946